PARTNERS IN KNOWLEDGE UK LTD
Suite No. 129
295 Chiswick High Road
LONDON W4 4HH

ONLN – Process & Mechanical Technology Essentials

PIK-0326 ONLN-2

PARTNERS IN KNOWLEDGE UK LTD
Suite No. 129
295 Chiswick High Road
LONDON W4 4HH

Place	: ONLINE	**Venue**	: ONLINE		
Start Date	: 02-03-2026	**End Date**	: 13-03-2026	**PPP**	: £4150

ONLN – Process & Mechanical Technology Essentials

PIK-0326 ONLN-2

If you can't train them, you can't blame them!

Short Description:

Process and mechanical technology combines various methods for transforming materials with the design and maintenance of mechanical systems. This integration is essential for ensuring efficient, safe, and reliable industrial operations. By focusing on optimised processes and durable equipment, this field plays a crucial role in the manufacturing and engineering sectors. The training program is designed to provide comprehensive instruction on the core principles and practices that are vital for professionals in process and mechanical engineering. Participants will explore foundational concepts that underlie the technologies and methodologies in this field, preparing them for real-world applications. Through this program, participants will gain valuable insights into key concepts, tools, and techniques relevant to both process and mechanical technology. This knowledge empowers them to enhance their expertise and effectively contribute to their organisations, fostering a deeper understanding of the complexities involved in their work.

Course Overview:

COURSE OBJECTIVES

At the end of this program, participants will be able to:

- Explore key principles in process technology, including fluid mechanics.
- Understand the basics of mechanical technology and thermodynamics.
- Apply mechanical principles in machine design.
- Analyse forces in mechanical systems.
- Comprehend mass and energy balance in industrial settings.
- Utilise process control techniques for efficiency.
- Implement safety and maintenance strategies to enhance reliability.

TARGET AUDIENCE

- Petroleum Engineers.
- Maintenance Engineers.
- Production Engineers.
- Process Engineers.
- R&D Chemists.
- Plant Chemists.
- Economists and Business Managers.

Program Outline:

DAY 1: Introduction to Process & Mechanical Technology

1. Overview of process technology and mechanical engineering concepts.
2. Significance of grasping fundamental principles in industrial environments.

3. Survey of equipment and systems commonly found in process industries.
4. Introduction to the basic concepts of fluid mechanics, thermodynamics, and mechanics.
5. Significance of process and mechanical technology across various sectors.

DAY 2: Mechanical Principles & Their Applications

1. Exploration of the mechanical properties of different materials.
2. Fundamentals of statics and dynamics.
3. Application of mechanical concepts in designing machinery.
4. Introduction to mechanisms and various mechanical systems.
5. Fundamentals of force analysis and load distribution.

DAY 3: Fundamentals of Process Technology

1. Overview of chemical and physical processing techniques.
2. Principles governing mass and energy balance.
3. Introduction to process instrumentation and control systems.
4. Understanding unit operations and unit processes.
5. Contribution of process technology to industrial production.

DAY 4: Heat Transfer & Thermodynamics

1. Basics of heat transfer mechanisms.
2. Core principles of thermodynamics.
3. Application of heat transfer and thermodynamics in process industries.
4. Overview of heat exchangers and their uses.
5. Understanding thermodynamic cycles and energy conversion methods.

DAY 5: Fluid Mechanics & Hydraulics

1. Fundamentals of fluid properties and their behaviour.
2. Basic principles of fluid statics and dynamics.
3. Application of fluid mechanics in piping systems.
4. Introduction to hydraulic systems and their components.
5. Techniques and devices for measuring fluid flow.

DAY 6: Mechanical Equipment & Systems

1. Overview of mechanical devices utilised in process industries.
2. Operational principles and maintenance of pumps, compressors, and turbines.
3. Understanding mechanical power transmission mechanisms.
4. Introduction to material handling machinery.
5. Impact of mechanical equipment on industrial processes.

DAY 7: Process Control & Instrumentation

1. Basics of systems for process control.

2. Introduction to various instrumentation and control devices.
3. Principles of feedback and feedforward control methods.
4. Understanding control loops and tuning strategies.
5. Role of process control in maintaining operational efficiency.

DAY 8: Safety & Environmental Considerations

1. Significance of safety in process and mechanical technology.
2. Overview of industrial safety standards and regulations.
3. Techniques for hazard identification and risk assessment.
4. Environmental implications of industrial activities.
5. Strategies for reducing safety and environmental risks.

DAY 9: Equipment Maintenance & Reliability

1. Importance of equipment upkeep in industrial operations.
2. Basics of preventive, predictive, and corrective maintenance strategies.
3. Introduction to reliability-centred maintenance (RCM) concepts.
4. Techniques for troubleshooting and diagnosing equipment issues.
5. Role of maintenance in ensuring reliability and operational uptime.

DAY 10: Emerging Technologies in Process & Mechanical Technology

1. Overview of recent technological advancements in process and mechanical engineering.
2. Introduction to Industry 4.0 and its effects on industrial operations.
3. Emerging trends in automation, robotics, and digital technologies.
4. The role of artificial intelligence and machine learning in process industries.
5. Case study analysis.